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24 *Clarendon Street, Somers Town,*
Feb. 14*th,* 1834.

Sir,

In answer to your note of the 1st, respecting Mr. Ross's polishing-powder, I beg leave to say that I have found it cut much keener, and produce as fine a polish as putty powder, which will be a great advantage, as it is not so liable to spoil the figure of lenses, &c. &c.

I am, Sir, &c. &c.

Hugh Powell.

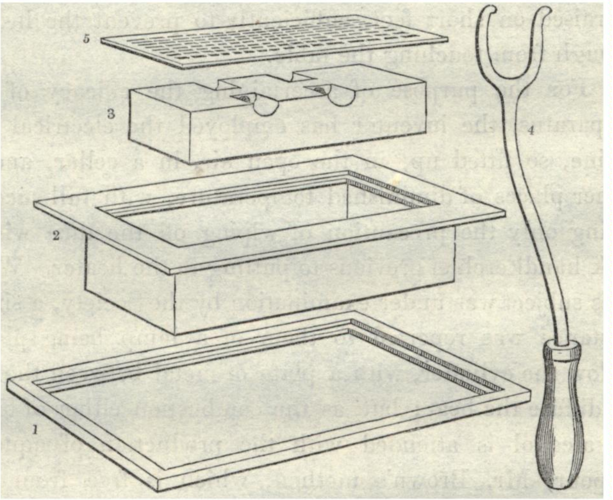
A. Aikin, Esq.
Secretary, &c. &c.

No. IV.

ELECTRICAL MACHINE.

The Silver Isis Medal was voted to Mr. Roger Brown, of Sheffield, for his Heater for an Electrical Machine, a Model of which has been placed in the Society's Repository.

Persons having occasion to use an electrical machine are often subjected to disappointment and great loss of time from the imperfect action of the machine, owing to the usually moist state of the air in England. Hence it is customary to place the machine before a brisk fire, in order that it may be thoroughly warmed and dried before proceeding to make use of it. Much time is thus consumed which might be better employed; and the risk of breaking the glass by a partial or too sudden an application of heat, is not inconsiderable. During its use, also, it is expedient, in order to keep up the activity of the machine, to rub it well from time to time with a warm silk handkerchief, an interruption very annoying to the experimenter, especially if he has not an assistant at hand.



Mr. Brown avoids the above-mentioned inconveniences in the following way:—In the board which forms the base of the machine, and directly below the glass cylinder, he cuts a rectangular hole quite through the wood. This is inclosed by the rabbeted metal frame 1. A trough 2, also of metal, is dropped into the frame, and is covered by the perforated plate 5, which is even with the upper surface of the board. 3 is an iron heater, which, when the machine is about to be used, is put into the fire and brought up to the greatest heat short of redness; it is then taken out by the prong 4, and placed in the trough already described, the perforated plate being previously removed and afterwards replaced. A current of heated air immediately rises, enveloping the glass cylinder, and keeping it dry and in the best state for working. When the heater gets too cool to produce the required effect, it is replaced by another, so that two heaters are necessary— one to be in the fire while the other is in use. The board is raised on short feet, sufficiently to prevent the heater-trough from touching the table.

For the purpose of ascertaining the efficacy of this apparatus, the inventor has employed the electrical machine, so fitted up, in the open air, in a cellar, and in other places of diminished temperature, with full success, using only the precaution of wiping off the dust with a silk handkerchief previous to putting in the heater. When this subject was under examination by the Society, a single instance was reported to them of a lamp being placed below the cylinder, with a plate of metal between the two to diffuse the heat; but, as the combustion either of oil or of alcohol is attended with the production of aqueous vapour, Mr. Brown's method, which is free from this objection, seems to deserve the preference.

No. V.

MANUFACTURE OF VARNISHES.

In the last volume of the Society's Transactions is inserted a very valuable practical treatise on the Manufacture of Varnishes, by Mr. J. W. Neil, of Battersea. The following directions for boiling oil have since been communicated by Mr. Neil, and are here inserted as an appendix to his former paper:—